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IMPORTED and DOMESTIC

FIELD, LAWN and TURF GRASS SEED



WHOLESALE PRICE LIST—SPRING, 1949

The DOUGHTEN SEED CO.

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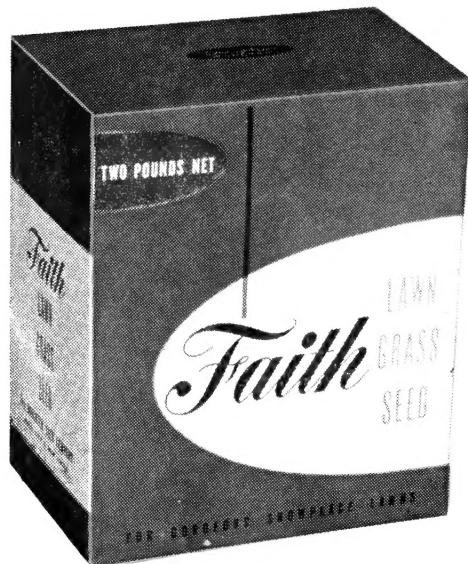
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Best popular lawn seed buy available. Contains 65% turf building grasses, including 60% Kentucky Blue Grass and 5% Colonial Bent. Nurse grasses are a blend of Redtop and English Perennial Rye Grass.

FAITH SHADY LAWN GRASS SEED

A superior blend of 80% imported and fancy-grade domestic turf building grasses, blended with a mixture of nurse grasses to produce luxurious lawns in shady areas.

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Packed:	Per 100 lbs.
50 lb. Cotton Bag	\$67.00
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5 lb. 3-color Display Box	70.00
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NOTE: Resale prices of FAITH LAWN GRASS SEED only, as shown in the Retail Price List, are established under the Fair Trade Laws of all states having such legislation. With the reassurance that the price of FAITH LAWN GRASS SEED is the same in all retail outlets, consumers will buy this product with greater confidence.

1 lb.	min. resale	\$1.15
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COMPARE FAITH VALUES: FAITH Lawn Grass Mixture is a blend of almost 2/3 Kentucky Blue Grass and Colonial Bent, which can be sold to the consumer at slightly over \$1.00 per pound. And volume sales of this popular lawn seed are ASSURED by the big FAITH advertising program outlined on the front cover.

The DOUGHTEN SEED CO.

Dependable Lawn Mixtures

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The FALL is
Nature's Time
for
BUILDING A LAWN



**This folder contains
Instructions for Fall Planting**

**The Doughten Seed Company
151 Twelfth St. Jersey City, N. J.**

Repair Lawn Injuries in Early Autumn

The most favorable season of the year for improving the vigor of established lawns, is early fall. By that time summer weeds have ceased growth, and the improvement measures adopted will be of primary benefit to the turf grasses. The more important general treatments are the application of lime to correct excessive acidity, distribution of a commercial fertilizer, and the thickening of thin turf by planting seed of adapted grasses. Lawns which suffer from poor soil drainage may require installation of agricultural tile drains, whereas those that are shaley, sandy, or have a compact undesirable soil structure will be greatly improved by the thorough incorporation of organic matter to a depth of several inches, and replanting. The majority of lawns, however may be restored to vigor by inexpensive means.

Excessive soil acidity makes the turf extremely susceptible to drought injury, prevents the proper response to fertilizer treatment, and predisposes the grass to ready injury from insects, diseases and other adversities. The amount of lime required will depend on the present degree of soil acidity. In general, 50 pounds of hydrated lime or 75 pounds of ground limestone evenly distributed over each 1,000 square feet of surface is usually sufficient for healthy turf production. Autumn is a favorable season for liming, since the penetration of lime into the soil is aided by fall rains and the successive freezing and thawing of winter and spring.

All lawns should receive an application of a complete commercial fertilizer in early fall, to stimulate vigorous growth during the cool moist autumn weather. Even though the turf be severely injured, timely application of fertilizer will frequently restore the turf to its normal density. Plant food equivalent to that contained in approximately 20 pounds of a complete commercial fertilizer, containing 5 to 8% nitrogen, 8 to 12% phosphoric acid, and 4 to 6% potash, should be applied for each 1,000 square feet of lawn surface. Commercial fertilizers analysing 5-10-5, or somewhat similar, are readily obtained from dealers in garden supplies. Uniform distribution of both lime and fertilizer is highly essential for the production of satisfactory turf since these materials move downward but not laterally in the soil.

On extremely thin or bare portions of the lawn, the lime and fertilizer should be incorporated with the upper layers of soil by vigorous raking, and the areas then reseeded with a suitable lawn seed mixture. In general, 2 to 4 pounds of seed are required for each 1,000 square feet of area, the quantity varying with the amount of grass still present. **Lawn Mixtures Blended by Doughten** and sold by your local dealer are quality mixtures. Consult your local dealer for the type of mixture best suited to meet your problem. Remember, cheap mixtures do not pay in results.

Planting New Lawns in Late August or September

Lawns planted in late summer or early fall have a greater opportunity for success than those seeded at any other season of the year. The cool moist weather normally experienced during the fall months is ideal for germination and sturdy growth of the grass seedlings. By the time summer drought and the encroachment of weeds occur, the turf should be well established and in far better condition than spring seedings to endure adversity.

Preparation of the Seed Bed—It is highly essential that the seed bed be improved prior to planting, since it is both difficult and expensive to attempt soil improvement after turf is established. The area should be examined for evidence of poor drainage either at the surface or in the sub-soil. Soils which are chronically soggy will require the installation of agricultural tile drainage. Soils which are merely heavy in texture and therefore drain slowly, may be corrected by the incorporation of organic matter and lime during seed bed preparation. On the other hand, lawn areas located on light sandy or shale soils will be greatly benefited by treatment to increase their water holding capacities. The incorporation of moderate amounts of spent mushroom soil or compost containing substantial portions of both clay and organic matter, is the most convenient means of improving such soils.

Organic Matter—Nearly all of the soils in this region are deficient in humus, and, therefore, will be improved for the growth of grasses by the incorporation of organic matter of suitable type. Excavated soils are particularly poor in humus, and larger

amounts of organic matter will be needed than is necessary for ordinary soils. Well rotted manure and cultivated peat or humus, are preferred sources of organic matter for lawn soil improvement. The thorough incorporation of 1 to 2 pounds of such materials on each square foot of surface, will be adequate provided it is thoroughly mixed with the upper 4 or 5 inches of soil.

Liming to Correct Soil Acidity—Contrary to popular belief, strongly acid soils are undesirable for lawns. Turf on such soils suffers severely from drought in summer and is unable to resist attacks of diseases and insects, and fails to respond properly to fertilization. Soil acidity is corrected by the addition of either hydrated lime or finely ground limestone. The amount of lime required depends on the present degree of soil acidity and the form of lime. In general 50 pounds of hydrated lime or 75 pounds of ground limestone for each 1,000 square feet of surface will be adequate. Thorough incorporation of lime with the upper few inches of soil is desirable.

Fertilizer—In general, the more valuable turf grasses thrive on fairly fertile soils and are able to compete more successfully with weeds under these conditions. This is true even for those grasses which are somewhat tolerant of low soil fertility. The incorporation of 20 to 30 pounds of a complete commercial fertilizer prior to seeding the new lawn, will ensure a proper supply of plant food. In general, a fertilizer which analyses approximately 5% nitrogen, 10% phosphoric acid, and 5% potash, will prove suitable for most types of soil. Wherever extremely infertile sub-soils and excavated material are exposed, the quantity of fertilizer may be increased. Uniform distribution of fertilizer is essential since movement in the soil is downward and not lateral. For convenience, the organic matter, lime, and fertilizer may all be incorporated simultaneously in the seed bed.

Choosing Lawn Grasses—Cheap lawn seed mixtures are a common source of failure, since the predominating species included do not endure regular mowing. The best results will be obtained by using **Quality Lawn Mixtures Blended by Doughten** and sold through established hardware stores, seed stores, nurseries and other seed outlets. Insist on

Doughten Seed Co. products for the best results.

Seeding—Approximately 5 pounds of a good-quality seed mixture are sufficient for planting 1,000 square feet of lawn. Uniform distribution of the seed is highly essential. A suitable method of planting consists of dividing the seed into 2 lots, one of which is evenly spread in a North-South direction, and the other in an East-West direction, over the same area. The seed should be lightly raked into the soil to a depth not greater than $\frac{1}{8}$ to $\frac{3}{16}$ of an inch, and the planted area lightly rolled. Use twice the quantity for quick results.

Care of New Lawns—If the newly seeded area is not kept moderately moist by natural rainfall for several weeks following planting, it will be necessary to resort to watering in order to prevent injury from drought. Artificial watering must be in the form of a light mist-like spray to avoid formation of hard crust on the soil surface. When moisture shortage necessitates watering, it is desirable to moisten the soil thoroughly to a depth of at least 4 inches, to ensure against rapid drying of the surface soil.

Young turf should be mowed no closer than $1\frac{1}{2}$ inches to permit vigorous root development. Frequent mowing is not harmful, provided the proper height is maintained. Newly planted grass requires protection from trampling for several months, since the more valuable permanent grasses grow relatively slow in the earlier stages of development. On well prepared seed beds, such grasses soon root thoroughly and show great aggressiveness after becoming established.

Crab Grass Control on Lawns

The control of crab grass and similar summer weeds in lawns need not be difficult or expensive. It is merely necessary to attack the pests at the weak points in the growth cycle. Fortunately, the same treatment which controls such weeds greatly improves the vigor of desirable turf grasses in the lawn.

Crab grass ceases active growth in late summer and is killed by frost. On the other hand, the permanent grasses continue healthy sturdy growth for several months in fall after the crab grass season terminates, and also make at least two months' growth in spring before the seeds of crab grass and other summer weeds germinate. During this period the lawn may be

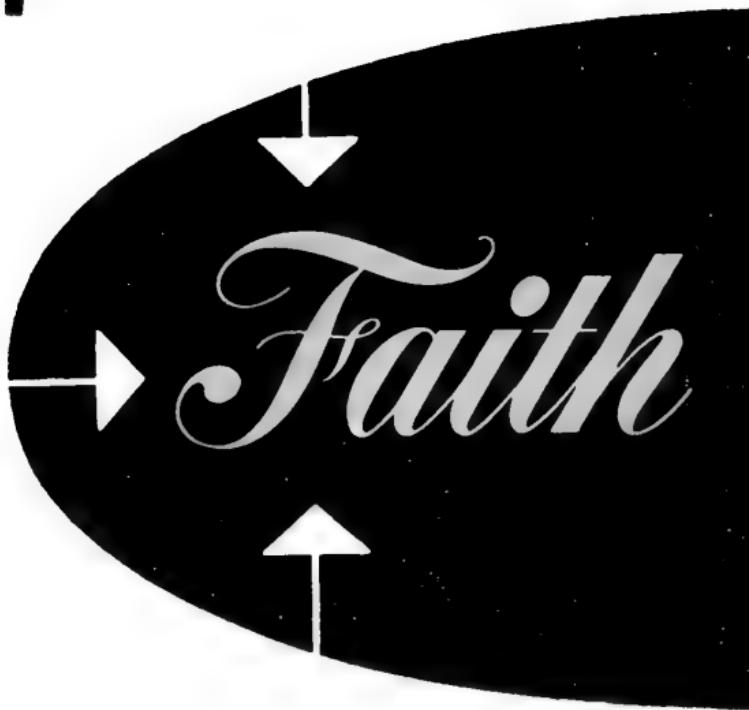
restored to such density and vigor that crab grass seedlings will find neither space nor light for development at the critical stage in late May or early June.

Fall Treatment of the Lawn—In late summer, the infested areas should be raked before each mowing to lift the prostrate stems of the weed and facilitate their removal. Attention should then be given to soil conditions. Since the desirable grasses prefer mildly acid to neutral soils, lime should be applied to correct the excessive acidity which is frequently present. Fifty pounds of hydrated lime or 75 pounds of finely ground limestone, evenly applied to each 1,000 square feet of lawn surface, will usually prove adequate for a 2-year period. In addition, an application of a complete commercial fertilizer at the rate of 15 to 25 pounds per 1,000 square feet will greatly stimulate turf growth during the fall season when crab grass is dormant. A desirable type of fertilizer for both fall and spring treatment of lawns analyzes about 5 per cent nitrogen, 10 per cent phosphoric acid, and 5 per cent potash. Commercial fertilizers analyzing 4-12-4, 5-8-5, or 6-6-5 should also be satisfactory.

Thin or bare areas may be raked thoroughly to incorporate the lime and fertilizer with the soil, seeded with a suitable mixture of adapted grasses, and thoroughly watered. The type of seeding mixture is most essential, since vigorous aggressive types of lawn grasses are required to offer competition to the crab grass. Fall lawns planted with **Doughton's Quality Mixtures** assure the crab grass competition the following spring.

For Sale by

put



in your lawn

— INTRODUCTION —

There is probably no single factor that sets a home off to better advantage than to have it surrounded by a rippling sea of velvety, green grass; and, conversely, there is nothing worse than a mongrel patch of weeds, crab-grass, insects, and bare-spots with, here and there, a wistful stand of turf grasses. Perfect lawns, like many other worthwhile things in life, do not just happen. On the other hand, a FAITH Lawn, the lawn that you can walk on and enjoy, can be yours for the asking if certain simple but essential principles are adhered to in its creation and maintenance.

For the past quarter of a century we have been answering volumes of mail each year on the care and maintenance of a fine lawn. This little handbook is a composite answer to those questions—the problems which confront the average lawn builder.

We think that you will find this handbook both interesting and informative. The indexing feature will keep pertinent information at your finger-tips.

THE USE OF LIME

East of the Mississippi River, most soils are deficient in lime. Lime serves several important purposes in the soil; it is a valuable and necessary plant food, it neutralizes the acidic by-products of organic decomposition, and, most important of all, it regulates the acid or alkaline condition of the soil—a condition which affects the metabolism of the plant.

The metabolism of the plant is nothing more than the ability of the plant to convert available food into sturdy cells and tissue. Biological tests have proved that turf grasses feed best and remain sturdy and healthy in a soil that is just slightly acid, or, to use a scientific term, a soil with a pH of 6.5. *Improperly-limed soils give rise to a thin, undernourished turf that will invite weed and crab-grass invasion.*

Realizing the need for a rapid and accurate acid test of the soil, The Doughten Seed Company, has developed the FAITH SOIL TESTER AND GUIDE, a simple little pocket-laboratory that will accurately and quickly give you the acid or alkaline condition of your soil, and, by means of a specially-designed slide-rule, automatically convert the reading into necessary additions of lime. The FAITH SOIL TESTER AND GUIDE can also be used for gardens and flower beds. Sufficient testing materials are supplied for over one hundred tests.

Lime is too important a fundamental of lawn care to be either neglected or indiscriminately applied. Too

much is as bad as too little. Test your soil or have it tested before lime is applied. Once limed properly, the average lawn should not be limed more often than once every three to five years. Lime, unlike fertilizer, is not rapidly dissipated. Crushed limestone rather than either hydrated or slaked lime should be used. It should be spread as evenly as possible over the surface of the lawn.

DRAINAGE

Good drainage is absolutely essential to a lush, sturdy growth of turf grasses. Well-drained soils prolong the growing season since they become warm more quickly in the Spring and remain warmer in the Fall; they encourage deep root structure and the available water supply to the grass is increased making it less susceptible to extended periods of drought.

Top-soil drainage problems are rather easily solved in the preparation of the seed-bed for a new lawn, or, on an established lawn, by annual top-dressing.

The real drainage problem is encountered in the sub-soil—the strata of soil that begins eight to twenty-four inches from the surface of the ground. In heavy clay areas where the sub-soil is impervious to moisture, or in marshy areas where the water table may begin four or five feet from the surface of the ground, it is necessary to provide artificial drainage.

The lawn area should be trenched every twenty feet to a depth of from twenty-four to thirty inches. Three to four inch agricultural tile should be installed. The tiles, similar to sewer pipe, should be pitched towards a sewer or sink-hole, so that the water accumulating in the tiles can be carried away.

Attempting to grow a fine lawn on poorly drained or marshy soil is a waste of time, seed, and fertilizer.

Green coverage on poorly-drained soil can be obtained by using a mixture of Red-top and Rye Grass. This mixture will not establish a permanent lawn, nor will it build a turf.

SOIL PREPARATION

A sandy loam is the best foundation for a lawn. Typically sandy soils allow water to pass downward too rapidly; air enters the soil too freely causing rapid oxidation and destruction of organic matter; they admit heat too readily allowing rapid evaporation of surface moisture and the subsequent burning of the grass roots; they are non-retentive and allow plant foods, mineral and organic, to leach away during rainfall. Clay soils, on the other hand, are deficient in drainage, do not allow air to penetrate for normal oxidation of organic matter, resist root penetration, and, after rainfall, bake out to a hard crust.

Sandy and clay soils may and should be brought to a loamy consistency. In the former case the application of one or two inches of heavy top-soil, and in the latter case two inches of sand to the surface of the soil prior to working will improve its texture.

THE SEED BED

Structurally speaking, the seed bed should be from four to eight inches deep, the soil to be of a loamy character, in a loosened condition, free of lumps, clods, sticks or stones.

Best results will be obtained if the elements which the soil lacks are applied prior to working the soil. Thus the top-soil should be spread on sandy soils and the sand on clay soils, so that when the soil is worked, the added elements will be thoroughly incorporated into the seed bed. Lime should be applied only after the soil has been tested and then added only in the amounts recommended on the FAITH SOIL TESTER AND GUIDE.

(Continued)

THE SEED BED (Continued)

Since most soils are deficient in organic matter a good source of organic matter should be applied at a rate of two hundred pounds per thousand square feet. Barn-yard manure is an excellent source but unsatisfactory because of the inevitable weed content. Dehydrated manures, humus, compost, and spent mushroom soil are good sources.

Twenty to twenty-five pounds of FAITH SOIL FOOD with INSECT CONTROL per thousand square feet of area will nourish the new seedlings and prevent insect damage. Twenty-five pounds of super-phosphate to each thousand square feet of area will promote rapid germination of the new seeds.

The ground can be worked with a spading fork, or, better, by means of a rototiller. Most gardeners and nurserymen will rototill your soil at a reasonable hourly rate. This will not only save labor, but will assure an excellent seed bed.

The surface of the seed bed must be carefully raked to remove stones, sticks, and clumps of dirt. Go over it often to firm and fine the soil. Since the seeds in FAITH LAWN GRASS SEED are small in size, no surface particle should be larger than a grain of wheat at the time of sowing the seed.

If a week or two can elapse between the time that the seed bed is prepared and the seeding—so much the better. This will give the added ingredients time to blend with the soil, and the dormant weed seeds time to germinate. The weeds can then be hoed from the surface of the seed bed prior to seeding.

SEEDS

It is often expensive to purchase cheap seeds. Cheaper blends of grass seed introduce into the soil species of grasses which have no place in a fine turf. And these grasses are often harder to displace than weeds. It is a fallacy to believe that cheap grass mixtures introduce

weeds and crab-grass. Grass and lawn seed mixtures blended by reputable concerns are crab-grass-free and the weed content is as low as modern cleaning methods will allow, regardless of the price paid for the mixture. The difference stems from the fact that the fine turf grasses in the better grade mixtures, if properly maintained, will resist the invasion of weeds and crab-grass while the cheaper blends, compounded of annual and bi-annual grasses, will not.

FAITH LAWN GRASS SEED contains from two and one-half to three million seeds per pound while cheaper mixtures seldom contain half this quantity. Five pounds of FAITH LAWN GRASS SEED will sow one thousand square feet of area with excellent coverage. Five pounds of most cheap mixtures will barely cover half this area.

FAITH LAWN GRASS SEED contains Kentucky Blue Grass, Colonial Bent Grass, Red-top, and Perennial Rye Grass.

Kentucky Blue Grass is the ideal turf grass for the northern United States. It is slow in starting but makes an excellent turf when fully developed. In most cases it will not make a good, thick turf in less than two or three years, thus the necessity of using the nurse grasses, Red-top and Perennial Rye Grass to assure complete coverage until the Kentucky Blue Grass is fully developed.

Colonial Bent Grass has been added to the mixture for the purpose of reinforcing the sod. Colonial Bent spreads by underground root-stocks resulting in a well-knit sod formation.

The Red-top and Perennial Rye Grass are nurse grasses. They are quick to germinate and give ground coverage within ten days of planting. They fill in the bare spots and help to prevent weed growth while the slow-germinating Kentucky Blue Grass is getting underway. The Perennial Rye Grass is deep-rooted and serves to prevent physical damage to the lawn until the permanent sod and turf of the Kentucky Blue Grass and Colonial Bent Grass is fully established.

SEEDING

There is one fundamental of seeding—SEED WILL NOT GROW ON TOP OF THE GROUND, IT MUST BE COVERED WITH SOIL. Whether a new area is seeded on a prepared seed bed, or whether the seed is applied to the top-dressing of an established lawn, the rule applies.

The rate of seeding should be from four to six pounds per thousand square feet of FAITH LAWN GRASS SEED for both new and established lawns. In reseeding an established lawn, the objective is to thicken the turf. The main essential is to completely and thoroughly cover the area and be certain that all thin spots have been seeded. It would be neither practical nor possible to seed each small, open area between standing blades of grass. Therefore a full rate of seeding is recommended as a practical measure.

Seed should be distributed evenly and a seeder will give excellent results.

If a seeder is not available, good results can be obtained by broadcasting if the following rules are followed. Seed on a relatively calm day so that the breeze will not scatter the seed. Sow one-half the quantity of seed in one direction, covering the seed with a light raking, sow the balance of the seed at right angles to the first direction, and, again, cover the seed with a light raking. For large areas, a drag rather than a light raking will serve to cover the seed. A drag is nothing more than a large steel doormat pulled over the area by means of a length of clothes line. Since most seeds require sunlight for germination, they should not be covered too deeply.

After seeding, the area should be rolled. Do not use too heavy a roller, two to three hundred pounds is ample. This serves to compress the soil around each seed particle encouraging rapid germination.

The soil should be kept moist at all times until the seeds are rooted.

ROLLING

An important, but neglected, treatment for the established lawn is rolling in the Spring. The Spring thaws cause a certain amount of upheaval in the soil. This causes the grass roots to be pulled loose from the soil. Rolling re-establishes contact between the roots and the soil and firms the grass plant in the ground.

A three to four hundred pound roller should be used. The lawn should not be rolled while the soil is still soggy or wet. It is neither necessary nor advisable to roll the lawn more than once a year.

REBUILDING AN ESTABLISHED LAWN

Next to under-fertilization, the procedure of raking the lawn and stirring the soil in the Spring constitutes the most popular and harmful practice of the average lawn grower. Soil and turf should not be disturbed any more than necessary, particularly in the Spring, since this operation uncovers many dormant weed seeds and places them in a favorable position for germination. You can not thicken a turf with seed alone! Unless the young seedlings are supplied with sufficient plant food elements, they will not produce the desired results.

Make it a point, early in the Spring, to clean out the weeds, the dead-grass, sticks, and stones. Avoid too vigorous raking in the process. Test your soil with the FAITH SOIL TESTER AND GUIDE and, if necessary, apply crushed limestone at the recommended rate. Loosen any bare-spots with a cultivating fork and adjust the soil in the bare-spot to a loamy consistency with sand or clay as the need may be. Apply FAITH SOIL FOOD WITH INSECT CONTROL at a rate of twenty to twenty-five pounds per thousand square feet of lawn area. Top-dress the soil with a good source of organic matter. (See section under TOP-DRESSING.) Spread evenly to a depth of from one-eighth to one-quarter inch. Seed with FAITH LAWN GRASS SEED or, in the shade, FAITH SHADY LAWN GRASS SEED. Rake lightly to cover the seed, roll, and keep moistened as for a new lawn.

SHADY SPOTS

Growing grass in the shade need not be any more of a problem than growing it in a sunny area. It merely involves the proper choice of seeds plus a little more attention to watering and fertilizing.

In FAITH SHADY LAWN GRASS SEED the proper choice of seeds is eliminated as a source of trouble. Years of experimentation have produced a fine blend of shade-loving grasses—Chewings Fescue, Poa Trivialis (the blue grass of the shade), Red-top, Rye Grass, and smaller amounts of Kentucky Blue Grass. FAITH SHADY LAWN GRASS SEED will produce under shade conditions, a permanent, velvety turf which will match in color and texture that produced by FAITH LAWN GRASS SEED in sunny areas.

Much of the difficulty in maintaining a shady turf is due to the failure to recognize the need for more attention to watering and fertilizing. The root system of grasses under shade is shallow. This is due in part to the strains of grasses that will thrive in the shade, and, in part, to the natural growing conditions. The shallow roots must absorb moisture and plant food from a thin layer of soil. This, plus the heavy demand on the area by the shade-producing elements, trees, bushes, shrubbery, etc., for moisture and plant food necessitates added watering and fertilizing.

Even during periods of minor drought when the grass in sunny areas does not seem to be suffering from a lack of moisture, the shady areas should be well soaked at least once or even twice a week.

More fertilization does not mean to use more fertilizer in shady areas, but to fertilize more often. Rainfall and soaking cause fertilizer to be leached down into the soil. In the shady areas this leaching process causes the fertilizer to go deeper into the soil than the roots can reach, thus the need to keep available plant food at reasonably high levels.

Two applications a year, one in the Spring and one in the Fall, of FAITH LAWN DIET at a rate of ten to fifteen pounds per thousand square feet of lawn area will supply ample plant food for the sunny areas. The shady areas should be supplied with two midsummer applications at the same rate.

TOP DRESSING

Top-dressing is an essential for established lawns when it is desired to either thicken the turf or to improve the soil. All lawns should be top-dressed as a maintenance procedure every second or third year.

Top-dressing consists of adding a good source of organic matter to the soil. This may be in the form of barnyard manures, dehydrated manures, humus, peat moss, compost, spent mushroom soil. From the standpoint of economy and as a source of organic matter, barnyard manures are excellent, but their inevitable weed content makes them unsuitable for turf use. Humus, because of its availability and relatively low cost, is widely used.

Top-dressing on a good loam soil merely consists of spreading the humus or other organic material over the lawn surface to a depth of from one-eighth to one-quarter of an inch.

On hard clay soils, the humus or other source of organic matter should be mixed with equal quantities of builder's sand and applied at a rate of from one-quarter to one-half inch in depth. On light, sandy soils, the humus or other source of organic matter should be mixed with equal quantities of clay or heavy top-soil and applied at the same rate. This treatment will materially affect the texture of the soil.

Top-dressing should not be confused with fertilization. Top-dressing is a conditioner for the soil and while it does contain plant food elements, top-dressing without added fertilization is a waste of time and money.

Top-dressing should be followed by seeding, a light raking to cover the seed, and rolling.

WATERING

A lawn should never be sprinkled—it should be soaked to a depth of at least six inches. Light sprinkling during the Summer is only of benefit to the weeds. The turf grasses blended in FAITH LAWN GRASS SEED are hardy and drought resistant. If they have been properly fertilized and mowed, they will resist long periods of drought.

Water only when the lawn is suffering from lack of moisture and then thoroughly soak the lawn. During periods of extended drought a thorough watering every ten days will be sufficient. Grass in the shade should be watered every five days.

SHADY SPOTS • TOP DRESSING • WATERING

FERTILIZING

Underfertilization is one of the chief causes of lawn failure. No amount of seed will thicken a turf unless the soil is amply supplied with the necessary plant foods.

Nitrogen, phosphorous, and potash are the three main plant nutrients considered most essential for satisfactory plant growth. Others, of course, are necessary but they are ordinarily present in most soils in sufficient amounts.

Nitrogen is the element responsible for rich color and heavy, luxuriant foliage. Phosphorous aids in root development and growth, builds a sturdier plant, and is especially needed by young grass plants. Potash is a conditioner—a tonic, and helps the grass to resist disease.

FAITH LAWN DIET has been designed as a complete and balanced food for the established lawn. It is high in nitrogen, the most necessary and expensive of plant foods. Fifty percent of this nitrogen is organic—slow acting, so that the lawn receives the benefit of this element during the complete growing season.

FAITH LAWN DIET is economical to use. Ten to fifteen pounds of FAITH LAWN DIET per thousand square feet of area applied twice a year, once in the Spring and once in the Fall, will supply sufficient plant food for the average lawn.

MOWING

Most lawns are clipped too short! Fine turf lawns, other than a pure bent grass lawn, should never be mowed closer than one and one-half to two inches. Closer mowing weakens the grass and invites weed and crab-grass infestation.

New lawns and newly seeded areas should not be mowed until they are three to four inches high, and then merely the tops of the blades should be sheared off. Lawns should not be mowed closer than two inches the first season. In the Fall it is injurious to continue mowing the lawn until the grass has ceased to grow. An extra inch or two of grass before winter acts as a protective covering for the lawn.

Be sure that the mower blades are sharp! A dull mower will uproot the grass.

Normal clippings can be left on the lawn with profit. When the grass has been allowed to grow too high and the clippings are longer than one inch, they should be removed by means of a grass-catcher on the lawn mower. Excessive clippings will smother the grass and mat the lawn.

WEEDS

Weeds are a common source of annoyance to the average lawn builder. While there are many chemical preparations on the market which are effective against weed growth, the only lasting protection is a thick, healthy stand of turf into which weeds cannot penetrate. A turf of this kind can be yours if you will only follow the correct principles of mowing, watering, top-dressing, fertilizing, seeding, and liming. Avoid the practices that encourage the growth of weeds such as vigorous raking in the Spring, close mowing, and frequent sprinkling. Do not wait until too late in the Spring to work your lawn: top-dress and seed all thin and bare-spots in the turf.

The more common weeds such as chickweed, dandelion, ground ivy, and plantain are easily destroyed by 2-4 D (2, 4 dichlorophenoxyacetic acid). 2-4 D is available in liquid and powder form, and since different manufacturers' products are of different concentrations, it is urged that the manufacturers' directions be closely adhered to. The usage of 2-4 D is not fool-proof. This chemical is harmful to trees, shrubbery, flowers, and most vegetables and it is apt to kill them if any contact whatsoever is made. Expensive ornamentals have been destroyed by coming in contact with the wind-blown dust. 2-4 D is also lethal to Bent Grass and White Clover.

Most other weed killers which include sodium chlorate, sodium arsenite, iron sulphate, and ammonium sulfamate are harmful to all vegetation. They should be used with extreme caution.

2-4 D preparations may be used on wide open lawns, but, for safety's sake, hand pulling of weeds and seeding of the open places left by their removal should be resorted to at or near flower beds and ornamental bushes.

CRAB GRASS

Crab-grass begins growing in May or June and is killed by the first frost. It is by far the most serious weed pest in lawns. Chemicals now used for control include Sodium Arsenate and Phenyl Mercuric Acetate. The latter seems to show promise if it is applied soon after emergence in late May or early June. Any plants which develop by mid-June should be hand-pulled to prevent the plant from going to seed.

Early Spring fertilization to encourage active growth of the turf grasses and the formation of a heavy turf not less than two inches high, will discourage the growth and spread of crab-grass.

INSECTS

Ants, cinch bugs, Japanese beetles, and beetle grubs do the most damage to lawns. Ants disturb the grass roots. Cinch bugs are a sucking insect that suck the sap from the new grass leaves as they unfold, thus starving the plant to death. Cinch bugs are less than one-quarter of an inch long. They have black bodies with whitish wings, each having a black spot in the center. The young have no wings and are reddish in color.

Japanese beetles and beetle grubs are a turf insect of major concern. Turf damaged by the beetle grubs appears as though it were suffering from a lack of moisture. They gnaw at the roots of the grass. Where only a small number of grubs are present, they cause small, irregular brown patches in the lawn. Where the infestation is large, wide areas may be destroyed, and in extremely heavy infestations all the grass roots may be cut off, so that the turf may be rolled up like a rug. They may be found in the soil below the damaged turf.

These may be effectively controlled by the usage of FAITH SOIL FOOD WITH INSECT CONTROL. This is a balanced 5-9-4, fifty percent organic fertilizer containing Chlordane, the most effective soil toxicant that is available. Two applications a year, one in the Spring and one in the Fall, at the rate of twenty to twenty-five pounds per thousand square feet of lawn area will fertilize the lawn and control these insects. FAITH SOIL FOOD WITH INSECT CONTROL is effective and quick-acting.

It will arrest insect damage within twenty-four hours, and it will destroy the insects within forty-eight hours.

Early applications of FAITH SOIL FOOD WITH INSECT CONTROL will not control the cinch bugs which may appear from June to September. Light applications of FAITH SOIL FOOD WITH INSECT CONTROL, at the rate of five pounds per thousand square feet of area every six to eight weeks during the summer months, will prevent cinch bug infestation.

Moles and gophers may be controlled by poisoned food, arsenic, lye, or Paris green inserted into the runway. Cyanogas, paradichlorobenzene, and carbon monoxide are effective when they are injected, as gases, into the runways.

Sod Webworms are dirty, gray caterpillars with regularly spaced brown spots on their bodies. Infestation can often be detected by a web-like film on the grass discernible in the morning before the dew has dried off. They can destroy large patches of turf in a few days. Two to three pounds of lead arsenate mixed with twenty gallons of water for each 1000 square feet of lawn is an effective control.

FUNGUS DISEASES

ALGAE are fine, microscopic plants which appear on the surface of the soil as a green scum or moss. It is most prevalent on thin turf during moist weather. It is easily and quickly controlled by the application of two to three pounds of hydrated lime per thousand square feet. The hydrated lime can be used as a dust or as a spray.

BROWN PATCH, DOLLAR SPOT and SNOW MOLD are the most common of the fungus diseases. They are easily spread by the soles of shoes. During treatment of affected areas every effort should be made to keep off the lawn.

Brown Patch is favored by warm, humid conditions. It appears suddenly as discolored areas varying in size from small patches to areas several feet in diameter. Around the borders of the spot where the fungus is still active a dark ring will be found. The grass in the ring has the appearance of being scorched or burned. The dead grass takes on a characteristic brown coloration. Except in rare cases, the grass is not permanently destroyed. Application of an inorganic mercury fungicide will give immediate control.

Dollar Spot will appear under conditions favoring Brown Patch. It may appear suddenly. It occurs in a sharply defined area about the size of a silver dollar. It does not spread in size but the number of spots multiply giving the lawn a moth-eaten appearance. The grass is killed in the affected areas and turns a bleached brown color. It can destroy large areas of turf. Like Brown Spot it can be easily and quickly controlled by the use of an inorganic mercury fungicide.

Snow mold occurs when snow drifts slowly melt in the Spring. It occurs in irregular patches less than twelve inches in diameter. The spots are a dirty white color with a pinkish cast. The dried spots have an appearance similar to Brown Patch. It can be checked by the usage of corrosive-sublimate. A vigorous brushing of the spots as soon as they appear on the average lawn will check the spread of the disease.

LEAF SPOT OF BLUE GRASS occurs as early as April. The leaves of infected plants are spotted with irregular blotches dark in color. The disease may cause the turf to lose its color and check its growth. There is no chemical control but the disease can be checked by fertilizing to encourage vigorous growth and by keeping the grass cut above two inches.

Lawns Flourish with

The top-quality blend. Produces a dense, deep-rooted velvety turf . . . a hardy, weed-free lawn. 5 lbs. covers 1000 sq. ft.

In non sunny areas, use Faith SHADY.

Destroys harmful insects and feeds soil in only one application. 50% organic fertilizer, 5-9-4. Contains CHLORDANE. 20 lbs. per 1000 sq. ft. kills insects and fertilizes.

The complete balanced food for established lawns, evergreens and non-flowering shrubs. Essential for heavy foliage and deep color. Apply in Fall and Spring at rate of 10 lbs. per 1000 sq. ft.

Gives an accurate acid analysis and prescribes tested formulas for correcting adverse soil conditions, anywhere. For lawns and gardens. Simple and quick to use. Pocket size. For testing over and over again.

LAWN
Faith GRASS
SEED

SOIL
Faith FOOD
with insect control

LAWN
Faith DIET

SOIL
Faith TESTER
& GUIDE

Doughten's
FINE LAWN PRODUCTS

THE DOUGHTEN SEED CO.
151 Twelfth St., Jersey City 2, N. J.

Faith SOIL FOOD with INSECT CONTROL

FEEDS *the soil with a balanced, 50 percent organic fertilizer.*

CONTROLS IN 18 HOURS

ANTS

CINCH BUGS

GRASS HOPPERS

JAPANESE BEETLES

JAPANESE BEETLE GRUBS

MOLE CRICKETS

IN LAWNS AND GARDENS

AN EXCLUSIVE DOUGHTEN PRODUCT

Faith

SOIL FOOD with INSECT CONTROL

This is not merely a fertilizer; it is a completely new product.

The newest and among the best chemical insecticides for soil and turf treatment is CHLORDANE. This chemical agent has received excellent reports from entomologists and State Experimental Stations because of the effective results obtained in the control of ants, cinch-bugs, Japanese beetles, beetle grubs, grasshoppers, and mole crickets. It is also effective in the control of ticks, chiggers, fleas, army worms, cut worms, leaf hoppers, and serpentine leaf miners.

CHLORDANE is an extremely powerful insecticide—so much so that it must be diluted with water or extended in an inert carrier so that it can be evenly applied at a cost within the budget of the average consumer.

Rather than extend this powerful material in an inert substance such as talc or other mineral dust, The Doughten Seed Company has designed a special fertilizer to carry this material so that the consumer can *kill injurious insects and feed the soil in one simple, economical application.*

Faith Soil Food with Insect Control will not only control obnoxious soil pests but will also feed the soil with a *fifty percent organic fertilizer* of a 5-9-4 ratio: five parts of Nitrogen of both chemical and organic origin to give the soil an immediate 'lift' and to maintain feeding this valuable element so necessary to firm leaf and stem growth and brilliant foliage for extended periods; nine parts of available Phosphoric Acid to promote germination, growth, high quality fruit or buds, and early maturity; four parts of water-soluble Potash for healthy growth and disease resistance. This can be done at the low cost of

only twenty-five cents per hundred square feet of lawn area; or twenty-five cents per one hundred running feet of garden row. This is approximately one-half the cost of doing the job with a purely chemical fertilizer and a CHLORDANE dust or spray. Not only is **Faith Soil Food with Insect Control** easy on your pocket-book, but it conserves both time and effort.

When applied at the rate of twenty to twenty-five pounds per one thousand square feet of lawn or soil area, or at the rate of one pound per fifty running feet of garden row, **Faith Soil Food with Insect Control** will supply adequate plant food for the area plus sufficient CHLORDANE to control Japanese beetle grubs and five times the amount necessary for the control of ants, grasshoppers, Japanese beetles, mole crickets, ticks, jiggers, striped cucumber beetles, serpentine leaf miners, and cut worms. It will also control mosquitoes in damp areas. The ground should be soaked thoroughly after application to force the CHLORDANE into the ground and to the roots of the plants where the majority of these insects feed. A single application is effective for from twelve to fifteen weeks. August and September application will allow the user to go into the winter with a grub-proof lawn since the Japanese beetle grubs enter the soil during this period. A Spring treatment in March, April, or May will eliminate these pests during the summer months.

Users should not depend upon the early application of **Faith Soil Food with Insect Control** to be effective in the control of cinch-bugs when they appear any time between June and September. Primary applications of **Faith Soil Food with Insect Control** are intended to control root-feeding insects, and it will have been thoroughly soaked into the ground. Little, if any, will remain on the leaves and stems where the cinch-bugs feed. For the control of cinch-bugs spread **Faith Soil Food with Insect**

Control over the infested area at the extremely light rate of from five to ten pounds per thousand square feet of area. Two or three treatments may be necessary between June and September if a heavy cinch-bug infestation develops.

Faith Soil Food with Insect Control enables you to *kill* the insects and *feed* the soil in one simple, economical operation.

PRICES

<i>Fifty Pound Bag . . .</i>	\$5.00
<i>Ten Pound Bag . . .</i>	\$1.50

The DOUGHTEN SEED COMPANY
JERSEY CITY 2, N. J.

For sale by



For Building A Lawn . . .



The Doughten Seed Company
151 Twelfth St., Jersey City, N. J.

1st . . Prepare Your Soil



Loosen soil to depth of four inches. If soil is poor pulverize and mix in dehydrated cow manure at rate of 200 lbs. to 1000 square feet. On good soil commercial fertilizer applied at the rate of 25 to 50 lbs. per 1000 square feet will supply sufficient plant food. Have soil tested and if strongly acid apply hydrated lime at the rate of approximately 50 lbs. per 1000 square feet.

On established lawns follow same procedure in applying a commercial fertilizer at least twice a year—spring and fall. Lime need be applied only about once every three years unless local conditions tend to create soil acidity.



2nd . . Use Good Quality Seed



Purchase seed of good quality containing grasses such as Kentucky Bluegrass, Bentgrass, Chewings Fescue, Redtop, and Ryegrass. The first three grasses build your turf; the other two act as nurse grasses protecting the turf building grasses during their early stages of growth. Rate of seeding depends on the mixture used. If the mixture is heavy with Turf building grasses of the highest quality it will be sufficient to sow at the rate of 7 lbs.

per 1000 square feet. Using a mixture of average quality the best results will be obtained by sowing at the rate of 10 lbs. per 1000 square feet.

On old lawns apply as needed according to condition of lawn. Roll and sprinkle lawn after seed has been applied.

3rd . . Maintenance

WATERING—Do not sprinkle lightly. It is better to saturate the soil once or twice a week than to sprinkle lightly every day. If possible use a rotating sprinkler. If hose is used adjust nozzle to spraying position.

MOWING—First cutting should be at a height of 3 or 4 inches. As season progresses lower mower blades to cut at height of $1\frac{1}{2}$ to 2 inches. Keep your lawn mower blades sharpened to prevent polling and tearing. Never cut lawn under $1\frac{1}{2}$ inches.

WEEDING—Keep lawn free of weeds. Hand pulling as weed plants appear is the most effective way of weed elimination.

FERTILIZING—Lawns require food and must be properly fertilized for best results. Application of a good balanced fertilizer twice a year, spring and fall, will pay dividends in a green luxuriant stand of grass.



This booklet is not intended as a course in lawn construction. It gives in a simplified form the necessary steps for building a lawn. If more detailed information is desired ask your dealer for Doughten's 8 page folder entitled "For That Perfect Lawn."



FOR BEST RESULTS

SOW

Doughten's
LAWN SEED



For Sale by



for that

PERFECT LAWN

Courtesy of THE DOUGHTEN SEED COMPANY

PERFECT LAWNS, like many other worthwhile things in life, do not just happen. On the other hand, lawns of beauty are easily obtainable if certain simple but essential principles are adhered to in their creation and maintenance. The purpose of this booklet will be to point out the "musts" in successful lawn culture, and, if possible, avoid the technical.

We will begin with

THE NEW LAWN—In starting a new lawn several important features must be given consideration. Among these are: Drainage, Preparation and Grading of Soil, Consistency of Soil, Fertilization of Seed Bed, the Use of Suitable Seed. If any of these features are neglected, results are almost certain to prove unsatisfactory.

DRAINAGE—Care must be used in grading in order that low areas or "bowls" will not exist in lawn upon completion, as grass cannot grow if at any time entirely submerged. Sub-soil drainage may be necessary in extreme conditions.

TOP SOIL—The ideal soil texture for lawns is a sandy loam containing about 10% to 15% organic matter. It should be four inches or more in depth. If you have soil of this nature you are indeed fortunate and only a complete fertilizer applied at the rate of 10 to 25 lbs. per 1000 square feet in the Spring and Fall, is all that you will need for the starting of your lawn.

A NEW LAWN ON POOR SOIL—Spade or plow the area to a depth of at least four inches.

If the soil is quite sandy, one inch of clay thoroughly mixed with the sand will be of much benefit to the lawn grasses. Clay useful for this purpose is generally lacking in organic matter, so the lawn maker can overcome this by adding the organic matter to the soil. It is possible to have a fair lawn on sand, provided the owner is equipped to water frequently during the dry, hot spells. Even in such cases it is desirable to work plenty of organic matter into the sand in preparation for the lawn.

If the lawn is being established on stiff clay soil, working from 1 to 3 inches of sand into the surface will be beneficial. Here, again, organic matter is highly desirable.

SOURCES OF ORGANIC MATTER—Well rotted stable manure is the best known source of this element for soil improvement. Its disadvantages, however, are the odor, expense and inevitable weed content. Dehy-

drated manures, cow, horse, sheep or poultry, are excellent substitutes. Apply about 200 lbs. to 1000 sq. ft. Cotton Seed meal and Soy Bean meal can also be utilized. Apply about 100 lbs. to 1000 sq. ft. Humus improves the physical condition of the soil, its plant food deficiencies can be overcome by larger application of fertilizer. Apply the Humus about 1 inch thick. Humus is relatively inexpensive. It can be supplied by the Doughten Seed Company dealers.

In addition to supplying the organic matter needs on poor soils, plant food in the form of commercial fertilizer should be added; about 25 to 50 lbs. per 1000 sq. ft. Fertilizers are supplied in various formulas. Consult your dealer for the best for this purpose.

LIME — Many experiments have proven that lawn grasses will not thrive on strongly acid soil. The turf under such conditions fails to respond to fertilizer treatment and is susceptible to injury from disease, insects and drought. Lime should be thoroughly worked into the seedbed as it is prepared. The following quantities of ground limestone on the basis of 1,000 square feet of lawn are suggested:

Sandy soils	50 to 75 lbs.
Loam soils	75 to 100 lbs.
Clay soils	100 to 125 lbs.

If hydrated lime is used apply the lower figure in each case since this type of lime is more concentrated.

GRUB AND WORM PROOFING THE SOIL—Add 10 lbs. of 10% DDT or its equivalent per 1,000 sq. ft. of lawn.

APPLYING THE MATERIALS—The organic matter, fertilizer, lime and DDT may be applied together to the soil surface. They should then be thoroughly mixed into the upper 4 to 6 inches of soil at least 1 week before seeding.

PREPARATION OF THE SEED BED—Grass seeds used for establishing lawns are small and require intimate contact with the soil particles for satisfactory germination. This requires a fine, well compacted seed bed which is free from clods and lumps. For small areas a hand cultivator is an excellent tool for pulverizing the soil. On larger areas a disc harrow followed by a weeder may be used. It is desirable to continue surface tillage operation over a period of time so as to promote the germination of weed seeds which will be destroyed by the tillage operation.

This is followed by a final grading and a smoothing of the surface in preparation for seeding. On small areas

Every pound of DOUGHTEN'S SEED is tested seed

a hand rake is generally used for the purpose, while on larger areas a weeder is a good implement. Go over the surface frequently to firm and fine the soil and to remove stones, sticks and other trash. At the time of sowing, no surface particle should be larger than a grain of wheat.

SEEDING—Fall and early Spring are the most favorable times to sow most grass seeds, particularly those of the perennial types. Late Spring seeding often fails due to competition from weeds, high temperature, and periods of drought which occur before the seeding plants are deeply and firmly rooted. Grass seed sown in the Fall becomes established before Winter and will, in the early Spring, start to grow before the weeds appear, hence is better able to withstand unfavorable conditions. Seeding from the first of September to the fifteenth of October usually is successful. Spring sowing should be done as early as weather will permit—March to May.

Grass seed must be scattered evenly. A good plan is to sow half in one direction, rake or harrow, then sow the other half at right angles and rake and harrow again. A fertilizer spreader will be found most convenient and economical when used as a seeder.

It is well to finish with a light rolling to encourage germination. It is also essential to success that the seed be lightly covered. Deep covering is undesirable since some grasses require light for germination. For the small area the covering may be effected by scattering screened soil over the seed or by lightly raking in followed by a light rolling. On the larger areas a brush drag such as a steel doormat or a weeder followed by a rolling may be used to advantage.

WATERING—The soil should be kept moist at all times until the seedlings are thoroughly rooted. Utilize a fine spray so that the soil will not cake. In the event that it is impossible to water, satisfactory results may be obtained on small areas, banks or terraces, by tacking down a covering "Erosionet" which tends to prevent excessive evaporation and will aid in protecting the young seedlings from the direct rays of the sun. In removing this covering, advantage should be taken of a cloudy day to prevent burning. If desired, this covering may be allowed to remain as it will rot away in a short time.

MOWING—Keep your mower blades sharp and well elevated so they will clip, not tear. When young grass

DOUGHTEN BRANDS remove the doubt in seed buying

reaches the height of 3 to 4 inches, it should be clipped lightly so that just the tips are removed. The mower blades should be gradually lowered until a height of 1½ to 2 inches is reached, at which point there should be no further lowering of the blades. A long turf on new Fall seeding will help eliminate crab grass and other weeds.

RENOVATING AN OLD LAWN—Next to underfertilization, the procedures of raking the lawn stirring the soil, and reseeding in the spring, constitute the most popular but harmful practices of many lawn growers. To these evils may be attributed the failure of many lawns. Soil and turf should be disturbed no more than necessary, particularly in the Spring, since this operation uncovers many dormant weed seeds and places them in a favorable position for germination.

It is a fallacy to attempt to thicken a lawn turf with seed alone. Unless the soil is sufficiently supplied with plant food elements, the young seedlings will generally fail to produce the desired results. It is far better to supply the needed fertility as a first measure. Make it a point early in the Spring to:

Clean out the weeds, dead grass, sticks and stones.

Apply lime according to requirements.

Spread over the area one of the suggested complete fertilizers at the rate of 25 to 40 lbs. per 1000 sq. ft.

Top dress with a compost, or Humus, spreading evenly over the ground $\frac{1}{8}$ to $\frac{1}{4}$ inch in thickness.

COMPOST—One may economically prepare his own top soil by mixing Humus, adding 5 lbs. Sulphate of Ammonia, 5 lbs. of Bone Meal to each 100 lbs. of the Humus. Add sand if soil is clay, and clay if the soil is sand. Spread over the area about $\frac{1}{8}$ to $\frac{1}{4}$ inch in thickness.

Rake or brush top dressing into the soil, seed, rake and roll as for a new lawn.

M A I N T E N A N C E

Successful maintenance of a lawn depends principally upon three things: clipping, fertilizing, and watering.

CLIPPING—Clipping is injurious to grass but it is practiced to improve the appearance. Most lawn grasses, bluegrass in particular, do not thrive when

DOUGHTEN MIXTURES are always value mixtures

they are kept closely cut. Weeds are better able to gain a foothold when the grass is thinned by very close cutting. Root growth develops directly in proportion to the amount of top growth, and deep root growth is desirable. A lawn will look as well, if trimmed uniformly and evenly, when cut to a height of $1\frac{1}{2}$ to 2 inches as it will when cut much closer.

Clippings may be left on the lawn if it is clipped frequently. When it has been neglected and there is considerable top growth it is wise to remove them to avoid matting and smothering.

In the fall it is definitely injurious to continue clipping until the grass has ceased to grow. An extra inch or two of growth before winter, acts as a protective covering and is the best insurance against winter injury and slow spring growth.

FERTILIZING—Nitrogen, phosphorus, and potash are the three main plant nutrients which are considered most essential for satisfactory plant growth. Others of course are necessary but they ordinarily are present in most soils in sufficient amounts.

For grasses it is best to supply all three elements in a mixture known as a complete fertilizer. These mixtures are usually designated by a ratio which expresses the actual amounts of each element contained in 100 pounds of fertilizer. A 5-10-5 fertilizer contains in 100 pounds, for example, 5 pounds of nitrogen, 10 pounds of phosphoric acid, and 5 pounds of potash.

Nitrogen improves the color of grass and stimulates the vegetative growth. Phosphorus aids in root growth development, builds a sturdier plant, and is especially good for young plants. Potash is a sort of tonic or conditioner and helps the grass to resist disease.

For the best results it is considered good practice to fertilize twice each year; in the early Spring (March or April) and in the early Fall (September). The Fall treatment builds a sturdier turf which overwinters well, while the early Spring treatment encourages an early growth of the grass which tends to crowd out the weeds.

In applying commercial fertilizers, precautions should be taken to avoid burning of the turf. This is particularly important when materials having a high concentration of plant food are used. The fertilizer should be applied when the foliage is dry so that the material does not stick to the leaves. Applications should be followed by thorough watering whenever possible to

DOUGHTEN FORMULAS are favorites for fine lawns

wash the foliage. Burning due to fertilizers, sometimes may be avoided or materially reduced by mixing the fertilizer with 2 or 3 times its volume of screened soil.

LIMING—Most lawns will require a topdressing of 50 to 75 pounds of ground limestone per 1,000 square feet every 2 or 3 years. This is best applied during the Fall or early Spring.

ROLLING—The primary purpose of rolling turf is to re-establish contact between the soil and the roots of grasses that have been lifted by heaving. The operation helps to maintain a smooth surface, but one should not attempt to level the lawn by using a heavy roller, since this is likely to pack the soil too greatly. Where leveling is required the low places should be filled with loam.

WATERING—Sprinkle the lawn only when it is actually suffering from a lack of moisture. Soak to a depth of 2 or 6 inches. No further moisture should be needed for several days.

Frequent light sprinklings compact the soil and are of more benefit to summer weeds than to the lawn.

GRUB PROOFING—An initial application of DDT to the seedbed should control grubs for several years. About every 4 or 5 years an additional treatment of DDT at the rate of 10 pounds per 1,000 square feet of lawn should be made. It may be topdressed uniformly over the surface of the soil.

RIDDING YOUR LAWN OF WEEDS

The best way to control weeds is to grow a thick, healthy lawn. The practices of liming, fertilizing, mowing, watering, etc. as discussed are your best guide to doing this. Should your lawn suffer from weed infestation there are some good treatments for eliminating the pests.

BROAD-LEAVED WEEDS—Such weeds as dandelion, buckhorn plantain, ground ivy and many others are easily destroyed with 2, 4-D weed killer. This material is cheap, efficient and non-injurious to the grasses. See your Doughten Seed Company Dealers for a supply. The 2, 4-D will not kill crab grass.

CRAB GRASS—This is the most difficult lawn weed to control. Good management is the best answer. Fertilize regularly in the Fall and early Spring to stimulate the good grasses when the crab grass is dormant or has not begun to grow. Mow no closer than 1½ inches and water only as needed.

If your lawn is now relatively free of this weed watch for the few plants that appear and pull them out before they can reseed. Heavily infested areas are best spaded under before August 1 and a new lawn seeded in September. If you do not wish to spade the lawn the crab grass can be burned off by applying about 5 pounds per 100 square feet of a fertilizer high in nitrogen such as an 8-6-4 mixture. On a bright sunny morning sprinkle the grass thoroughly then apply the fertilizer. The mixture will dissolve the fertilizer and the high concentration of salts that result will burn the crab grass severely. Plan to replant in September.

A new crab grass killer known as PMAS is now available and early tests indicate it will kill young crab grass plants effectively. It can be secured through your local dealer. Follow directions found on the container. If you plan to use it do it when the crab grass is still small or before seed heads are produced.

USE HIGHEST QUALITY LAWN SEED—Your lawn can only be as good as the seed you sow. Cheap seed often results in failures and disappointments. Good soil will make full use of the lime and fertilizer you add and respond to superior management treatments by producing a velvety, green carpet that will be a joy to the entire family.

The following Lawn Mixtures are
PRODUCTS of
THE DOUGHTEN SEED COMPANY

Freedom

Velva-Turf

Faith

Sunnyside

Fame

Community Park

Permagreen

Greendale

Ask for

Doughten's Better Value Mixtures

FOR SALE BY

SUGGESTED RETAIL PRICE LIST

SPRING 1949

	1 lb.	2 lb.	5 lb.	10 lb.	25 lb.	50 lb.
FREEDOM QUALITY PRODUCTS	\$1.40	\$2.75	\$6.60	\$13.00	\$31.00	\$60.00
*FAITH QUALITY PRODUCTS	\$1.15	\$2.25	\$5.25	\$10.00	\$24.00	\$46.00
FAME QUALITY SUNNY	\$.85	\$1.65	\$3.98	\$ 7.80	\$18.00	\$35.00
FAME QUALITY SHADY	\$.80	\$1.55	\$3.75	\$ 7.00	\$17.00	\$33.00
SUNNYSIDE	\$.70	\$1.35	\$3.25	\$ 6.25	\$15.50	\$30.00
COMMUNITY PARK	\$.60	\$1.15	\$2.65	\$ 5.10	\$12.25	\$24.00
GREENDALE	\$.45	\$.85	\$2.00	\$ 3.90	\$ 9.50	\$18.00
VELVATURF	\$1.15	\$2.25	\$5.25	\$10.00	\$24.00	\$46.00
PERMAGREEN	\$1.15	\$2.25	\$5.25	\$10.00	\$24.00	\$46.00

* Fair Trade—Can not be sold for less.

Note: This card has been corrected. Due to error in printing, Suggested Retail Price List on cover of Lawn Seed Price List, prices for 5# and 10# quantities of FAITH, PERMAGREEN, and VELVATURF were in error.





Freedom QUALITY GRASS SEED



**FINEST QUALITY-HIGHEST PURITY
MINIMUM OF WEEDS AND INERT MATTER**

FREEDOM QUALITY LAWN MIXTURE —

Over 80% of the finest turf building grasses are blended with quality nurse crops to produce the rapid results expected by most home owners. Contains Kentucky Blue Grass, Chewing's Fescue, Colonial Bent, and Redtop.

FREEDOM LIGHT SOIL MIXTURE —

A mixture containing over 85% of the finest grade turf building grasses, blended especially for sandy areas. Turf grasses include Kentucky Blue Grass, Chewing's Fescue, and State Certified Illahee Creeping Red Fescue. Nurse Grass is Redtop. Note: Because of its exceptionally high turf grass content, FREEDOM LIGHT SOIL MIXTURE should be planted not later than April 15th.

FREEDOM QUALITY SHADY MIXTURE —

Contains over 75% top quality turf building grasses. Kentucky Blue Grass, Chewing's Fescue, State Certified Illahee Creeping Red Fescue, and Poa Trivialis are blended with a nurse crop of English Perennial Rye Grass, to produce a beautiful lawn in densely shaded areas.

All Three Quality Freedom Blends

Packed:	Per 100 lbs.
50 lb. Cotton Bags	\$85.00
25 lb. Cotton Bags	86.00
10 lb. Cotton Bags	87.00
5 lb. Cotton Bags	88.00
2 lb. Cotton Bags	89.00
1 lb. Cotton Bags	90.00

Two FAME Quality SUNNY LAWN MIXTURES

FAME QUALITY SUNNY, with White Clover —

This popular-priced blend of native grasses grows rapidly, produces a pleasing turf. 60% turf building grasses. Gives excellent results on both good and impoverished soils. Contains Kentucky Blue Grass, Chewing's Fescue, Meadow Fescue, Common Rye Grass, and White Clover.

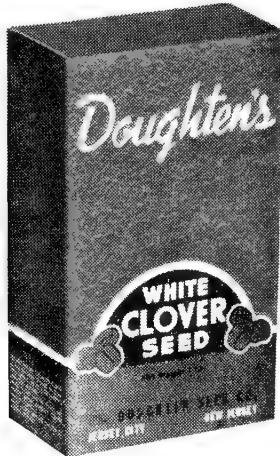
FAME QUALITY SUNNY, without White Clover.

In this mixture, Kentucky Blue Grass is substituted for the White Clover, giving a Quality Blend of fine grasses at a moderate price, for those who prefer a lawn mixture without clover. 60% turf building grasses. Contains Kentucky Blue Grass, Meadow Fescue, Chewing's Fescue, and Common Rye Grass.

Fame Quality Sunny Mixtures

Packed:	Per 100 lbs.
50 lb. Cotton Bags	\$50.00
25 lb. Cotton Bags	53.00
10 lb. Cotton Bags	54.00
5 lb. Cotton Bags	55.00

ALL QUOTATIONS PER 100 LBS.



Fame QUALITY SHADY

SUNNYSIDE MIXTURE

COMMUNITY PARK

GREENDALE

**VELVA-TURF
PERMAGREEN
FREEDOM POLO or
ATHLETIC MIXTURE**

WHITE CLOVER

Finest Grade White Clover, in attractive, compact boxes, for easy handling.

Packed	Per 100 lbs.	Container	Per Container	Price
50 lb.	\$95.00	No. 1—24 1-lb. Boxes	\$24.00	
25 lb.	\$96.00	No. 2—24 1/2-lb. Boxes	\$12.50	
10 lb.	\$97.00	No. 3—12 1-lb. Boxes		
5 lb.	\$78.00	12 1/2-lb. Boxes		\$18.25

A competitive shady mixture of Chewing's Fescue, Meadow Fescue, Timothy, Perennial Rye Grass, and Common Rye Grass.

Packed:	Per 100 lbs.
50 lb. Cotton Bags	\$45.00
5 lb. Cotton Bags	\$48.00
2 lb. Cotton Bags	\$49.00
1 lb. Cotton Bags	\$50.00

1, 2 & 5 lb. bags are packed 50 lbs. to a container.

All-purpose mixture. Contains at least 30% turf building grasses, and no less than 15% Blue Grass. Includes Common Rye Grass, Kentucky Blue Grass, Timothy, Redtop, Meadow Fescue, and White Clover. This mixture does equally well in sun and shade. Inert less than 8%.

Packed:	Per 100 lbs.
50 lb. Cotton Bags	\$40.00
5 lb. Cotton Bags	\$43.00
2 lb. Cotton Bags	\$44.00
1 lb. Cotton Bags	\$45.00

1, 2, & 5 lb. bags are packed 50 lbs. to a container.

This quick-growing mixture is composed of Common Rye Grass, Redtop, Timothy, Fancy Kentucky Blue Grass and White Clover. Not over 8% Inert.

Packed:	Per 100 lbs.
50 lb. Cotton Bags	\$32.00
5 lb. Cotton Bags	\$35.00
2 lb. Cotton Bags	\$36.00
1 lb. Cotton Bags	\$37.00

1, 2 & 5 lbs. are packed 50 lbs. to a container.

Blended for "Competitive Purposes." Contains Common Rye Grass, Timothy, Redtop, and Blue Grass. Not over 10% Inert.

Packed:	Per 100 lbs.
50 lb. Cotton Bags	\$24.00
5 lb. Cotton Bags	\$27.00
2 lb. Cotton Bags	\$28.00
1 lb. Cotton Bags	\$29.00

1, 2 & 5 lb. bags are packed 50 lbs. to a container.

Packed	Per 100 lbs.
50 lb. Cotton Bags	\$70.00
50 lb. Cotton Bags	\$65.00
50 lb. Burlap Bags	\$65.00

Smaller packages available at usual advance.

STOCK AND SELL

Doughten's
FINE LAWN PRODUCTS

Advertised
on
Radio
and in
Newspapers

Faith
WILD BIRD
FOOD

Faith Soil Food with Insect Control

A new product with CHLORDANE. A fifty percent organic fertilizer (5-9-4) with the new and potent soil toxicant — CHLORDANE. Feeds the soil and controls Japanese beetles, beetle grubs, cinch bugs, cut worms, ants, and other pests in one operation. For lawns and gardens.

RETAIL PRICE

50 lb. bag, \$5.00 10 lb. bag, \$1.50
(40% Dealers' Discount)

Faith LAWN DIET

The perfect lawn food. A fifty per cent organic fertilizer of an 8-6-4-ratio — high in nitrogen to aid in producing a rich, green turf.

RETAIL PRICE

50 lb. bag, \$3.75 10 lb. bag, \$1.00
(40% Dealers' Discount)

Freight paid on shipments of 300 lbs. or more of SOIL FOOD, LAWN DIET or combination of both.

Faith SOIL TESTER & GUIDE

A handy gadget designed by and exclusive with the Doughten Seed Company for every gardener's tool kit. Makes an accurate and rapid acid analysis of any soil in two minutes. The handy slide rule interprets the results in terms of necessary soil treatment. For lawns, flowers, shrubbery, and general garden usage. Packed in dozens. Postpaid.

RETAIL PRICE

\$1.00 Each
(40% Dealers' Discount)

A well balanced nutritious mixture containing Whole Peanuts, Peanut Hearts and Sunflower Seed.

We offer Wild Bird Food in three different packings:

	Price per 100 lbs.
(1) Packed in 100 lb. Burlap Bag	\$8.00
(2) Packed in 100 lb. Burlap Bag Containing 20 5-lb. . . empty attractive bags.	\$8.75
(3) Packed cases containing 12 5-lb., 3 color Faith Bags	\$10.75

WILD BIRD FOOD PRICES
F.O.B. JERSEY CITY
300 LBS. OR MORE FREIGHT PAID



The Doughten Seed Company gives no warranty, express or implied, as to the productiveness of any seeds it sells, and will not be in any way responsible for the crop. Our liability, in all instances, is limited to the purchase of the seeds.

